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REPUBLIC OF SOUTH AFRICA

EPARTEMENT VAN HANDEL
EN NYWERHEID

Rec'd 15 FEB 2005

15 FEB 2005



PCT/ZA03/00116

08 OCT 2003

Certificate

REPUBLIC VAN SUID-AFRIKA

PATENT OFFICE

DEPARTMENT OF TRADE AND
INDUSTRY

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PCT/ZA03/00116

08 OCT 2003

REC'D 20 OCT 2003

WIPO

PCT

- 1) South African Provisional Patent Application No. **2002/3346** accompanied by a Provisional Specification was originally filed at the South African Patent Office on **26 April 2002**, in the name of **LUBBE, Johan Dewald** in respect of an invention entitled: **"Refuse Bin"**.
- 2) The application was subsequently post-dated to **15 August 2002**. By virtue of such postdating, the effective filing date of the application is **15 August 2002**.
- 3) The photocopy attached hereto is a true copy of the provisional specification and drawings filed with South African Patent Application No. **2002/3346**.

Geteken te
Signed at

PRETORIA

in die Republiek van Suid-Afrika, hierdie
in the Republic of South Africa, this

25th

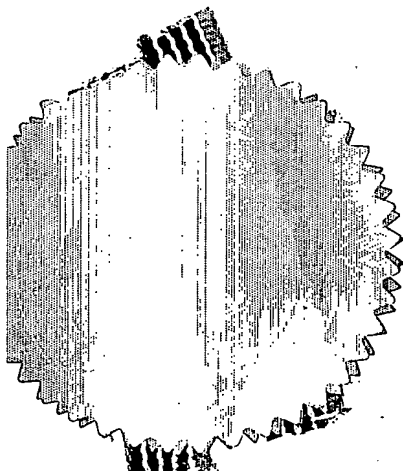
dag van
day of

September 2003

Registrateur van Patente

**PRIORITY
DOCUMENT**

SUBMITTED OR TRANSMITTED IN
COMPLIANCE WITH RULE 17.1(a) OR (b)



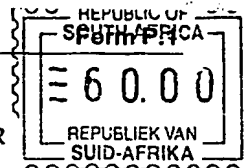
REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978

APPLICATION FOR A PATENT AND ACKNOWLEDGEMENT OF RECEIPT
(Section 30 (1) - Regulation 22)

The grant of a patent is hereby requested by the undermentioned applicant on the basis of the present application filed in duplicate.



PBHR
229



OFFICIAL APPLICATION NO	
21	01 2002/3346

DMK REFERENCE
P24390ZA00

FULL NAME(S) OF APPLICANT(S)

71	LUBBE, Johan Dewald
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ADDRESS(ES) OF APPLICANT(S)

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TITLE OF INVENTION

54	REFUSE BIN
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THE APPLICANT CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANING FORM P2 The earliest priority claimed is	
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THIS APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO.		21	01
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THIS APPLICATION IS FRESH APPLICATION IN TERMS OF SECTION 37 AND BASED ON APPLICATION NO.		21	01
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THIS APPLICATION IS ACCOMPANIED BY :	
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x	1a	A single copy of a provisional specification of 10 pages.	
	1b	Two copies of a complete specification of pages.	
	2a	Informal drawings of sheets.	
x	2b	Formal drawings of 5 sheets.	
	3	Publication particulars and abstract (form P8 in duplicate).	
	4	A copy of figure of the drawings for the abstract.	
	5	Assignment of invention (from the inventors) or other evidence of title.	
	6	Certified priority document(s).	
	7	Translation of priority document(s).	
	8	Assignment of priority rights.	
	9	A copy of form P2 and a specification of S.A. Patent Application.	21 01
	10	A declaration and power of attorney on form P3.	
	11	Request for ante-dating on form P4.	
	12	Request for classification on form P9.	
	13a	Request for delay of acceptance on form P4.	
	13b		

DATED 26 April 2002

ADDRESS FOR SERVICE	
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Patent Attorney/for Applicant(s)

REGISTERED PATENTS DESIGNS, TRADE MARKS AND COPYRIGHT OFFICIAL DATE STAMP Post-dated 2002-04-26 REGISTRAR OF PATENTS 31-01-2002 REGISTRATEUR VAN PATENTE, MODELLE, HANDELSMERKE EN OUTEURSREG 08.08.2002

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp.

REPUBLIC OF SOUTH AFRICA

PATENTS ACT, 1978

PROVISIONAL SPECIFICATION

(Section 30 (1) - Regulation 27)

OFFICIAL APPLICATION NO.		LOGGING DATE	DMK REFERENCE
21	01	2002/334822 Post dated 08.08.2002 26 April 2002 31.07.2003	P24390ZA00
FULL NAME(S) OF APPLICANT(S)			
71	LUBBE, Johan Dewald		
FULL NAME(S) OF INVENTOR(S)			
72	LUBBE, Johan Dewald		
TITLE OF INVENTION			
54	REFUSE BIN		

REFUSE BIN

FIELD OF THE INVENTION

This invention relates to a refuse bin and more particularly, but not exclusively, to a refuse bin for use in disposing of waste material on a tray.

BACKGROUND TO THE INVENTION

Refuse bins are commonly used in dining areas of fast food outlets for disposing of waste material. One type of refuse bin currently in use, consists of a housing having an opening at the top of the housing and a lid. A user tips waste from a tray into the waste container after removing the lid.

The housing of another type of bin, most commonly in use at fast food outlets, has a side opening which is guarded by a swing flap.

The swing flap and/or lid described above commonly obstructs the disposal of waste through the opening with the result that empty containers and other waste items are swept off the tray and onto a floor of the dining area by the swing flap or lid if the swing flap or lid is not properly manipulated.

Most dustbin housings are square in cross section and contain round waste containers. Waste disposed into such housings, may fall between the housing and waste container instead of into the waste container.

OBJECT OF THE INVENTION

An object of the present invention is to provide a refuse bin which, at least partially, alleviates some of the abovementioned difficulties.

SUMMARY OF THE INVENTION

According to the invention there is provided a refuse bin for disposing of waste situated on a tray comprising a housing having a trapdoor, the trap door having tray engaging means for releasably engaging the tray, the trapdoor being movable between a first position in which a tray with waste on the tray is engageable on the trap door and a discharge position in which an operative upper surface of a trapdoor is inclined so that waste on the tray is discharged into the housing while the tray remains engaged on the trap door.

A further feature of the invention provides for at least part of the trapdoor to be made of a metallic or magnetic material and for such material to form the tray engaging means.

There is alternatively provided for a metallic or magnetic material member to be secured in or to the trapdoor.

A still further feature of the invention provides for the tray engaging means to include a protrusion extending from the trapdoor for releasably engaging a tray; and for the protrusion to be a substantially normally extending flange terminating in a lip formation.

A yet further feature of the invention provides for the refuse bin to include an actuator for actuating the movement of the trapdoor between the first and discharge positions.

Further features of the invention provide for the trapdoor to be biased towards its first position, for the trapdoor to be spring-biased towards its first position; for the actuator assembly to include a foot pedal; and for a coil spring or any other spring mechanism to provide the bias and to act on the foot pedal.

There is further provided for the waste receiving means to include a waste container.

The invention further provides for an operatively upper perimeter of the waste container to extend along an inner surface of the housing.

In a preferred form of the invention, the waste container is square in cross-section and its upper perimeter fits snugly against the inner surface of the housing to prevent waste from falling between the waste container and the inner surface of the housing.

There is also provided for the perimeter of the waste container to include a frame and for the frame to fit snugly inside the housing.

These and other features of the invention are described in more detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention are described below, by way of example only, and with reference to the accompanying drawings in which:

Figure 1 shows a perspective view of a first embodiment refuse bin according to the invention;

Figure 2 shows a plan view of the refuse bin of Figure 1;

Figure 3 shows a side view of the refuse bin of Figures 1 and 2;

Figure 4 shows a cross sectional side view of the refuse bin of Figures 1 to 3 with an actuating means, which is not indicated in Figures 1 to 3; and

Figure 5 shows a perspective view of a second embodiment of a refuse bin.

DETAILED DESCRIPTION OF THE DRAWINGS

With reference to the drawings, in which like features are indicated by like numerals, a refuse bin is generally indicated by reference numeral 10.

The refuse bin 10 consists of a housing 12 having a trapdoor 14; a waste receiving means in the form of a waste container 16; and an actuator assembly including a foot pedal 20 and a pulley system 24.

The upper surface of the trapdoor 14 is made of a metallic material, such as steel, and attracts magnets (not shown) positioned on the underside of a tray 22.

The trapdoor 14 is movable between a first position in which it at least partially closes an opening in the housing 12 and a discharge position in which an upper surface of a trapdoor 14 is inclined towards the waste container 16. The actuator assembly actuates movement of the trapdoor 14 between its first and its discharge positions.

The foot pedal 20 is moveable between a default position and a depressed position and is biased towards its default position by means of a spring 28. A pulley system 24 is connected between the foot pedal 20 and the trapdoor 14 such that the trapdoor is in its first position when the foot pedal 20 is in its default position. A first extremity of a cable 36 is connected to an upper end 19 of the foot pedal 20. The cable passes over pulleys 34 and 35 and terminates in a second extremity which is connected to the trapdoor 14. The point of connection of the second extremity of the cable 36 to the trapdoor 14 is at a point 38 sufficiently removed from the hinge 37 of the trapdoor 14 for the pulley system 24 to provide the required leverage to return the trapdoor 14 to its first position when the foot pedal 20 is released.

The waste container 16 is a flexible material bag and is square in open cross-section. A perimeter 15 of the waste container 16 is attached to a frame 17 and the frame 17 fits snugly inside the housing 12 to prevent waste from falling between the waste container 16 and the inner surface of the housing 12. In this embodiment, a bracket 32 which receives the frame 17 of the waste container 16 is provided by the housing 12. The frame 17 of the waste container 16 can be slid out of the bracket 32 when replacing or emptying the waste container 16. A plastics material refuse bag may also be located in the waste container 16 for receiving waste therein.

In use, a tray 22 carrying waste material, such as empty food and beverage containers, is placed on the trapdoor 14. The metallic upper surface of the trapdoor attracts magnets on the underside of the tray 22. The foot pedal 20 is depressed and the trapdoor 14 moves towards the discharge position thereby tipping the waste material from the tray 22 into the waste container 16. When the trapdoor 14 is in the discharge position the magnetic attraction between the magnets on the underside of the tray 22 and the metallic upper surface of the trapdoor 14 is sufficiently strong to ensure that the tray 22 remains on the upper surface of the trapdoor 14. When the foot pedal 20 is released, it returns to its default position under its spring bias and the trapdoor 14 returns to its first position. The tray 22 can then be removed from the trapdoor 14.

When the waste container 16 is full it can be accessed through a maintenance door 40 in the side of the housing 12. The frame 17 of the waste container 16

can be slid from the bracket 32 and the waste container can be emptied or replaced.

Figure 5 shows a second embodiment of a refuse bin 10.

The refuse bin 10 includes a housing 100 with a maintenance door 105 in the front of the housing.

A trap door 101 is located on the top of the housing. A front end 110 of the trap door 101 is hingedly connected to an inner edge of a top front panel 106 of the housing. The trap door is hingeable in an opening in the top of the housing through which waste is discharged into a bin (not shown) in the housing.

The trap door 101 is movable between a first position as is shown in figure 5 and a discharge position in which the trap door is hinged so that an inner edge 107 of the trap door is located inside the housing with the upper surface of the trap door inclined into the housing.

The trap door 101 includes two rails 104 on its upper surface.

A trap door movement actuator means in the form of a handle 102 and handle bars 103 are provided. The handle bars are connected between the trap door and the handle 102 so that the handle is located in front of the housing 100

and below a plane defined by the top front horizontal panel 106 of the housing.

In use, edges of a tray with waste material on the tray are engaged under the rails while the trap door is in its first horizontal position as shown in figure 5.

The handle is lifted so that the trap door hinges to its discharge position whilst the tray remains engaged under the rails.

With the trap door in its discharge position, the upper surface of the trap door and the tray are inclined into the housing thereby discharging, under force of gravity, the waste material from the tray into the bin inside the housing.

The bin used in this embodiment is similar to the bin used in the embodiments of figures 1 to 4.

The trap door is biased towards its first position by a gravitational movement caused by the handle and handle bars.

The trap door is now lowered to its first position by lowering the handle. The empty tray can be removed from the trap door.

It is envisaged that the refuse bins described herein will be useful in disposing of waste material on a tray as the user need only place the tray on the trapdoor and depress the foot pedal or operate the handle. Furthermore, the

waste containers can be quickly and easily replaced or emptied. The snug fit of the waste container inside the housing ensures that no waste falls between the waste container and the housing.

It is also envisaged that movement of the trapdoor will be sudden in the case of the embodiment of figures 1 to 4 such that spillage of fluids from used containers onto the tray is prevented.

It will be appreciated that the invention is not limited to the precise details as described hereinbefore. For example, the tray engaging means could be in the form of a protrusion extending from the trapdoor to releasably engage a tray; the waste receiving means could include a refuse chute and a waste container; and the waste container need not fit into a bracket provided by the housing but may be supported in any convenient manner. Also, any actuator means may be provided instead of the pulley system. For example, an automated hydraulic or electric system or any other convenient mechanical actuator may be used.

Dated this 26th day of April 2002

Patent Attorney Agent for the Applicant

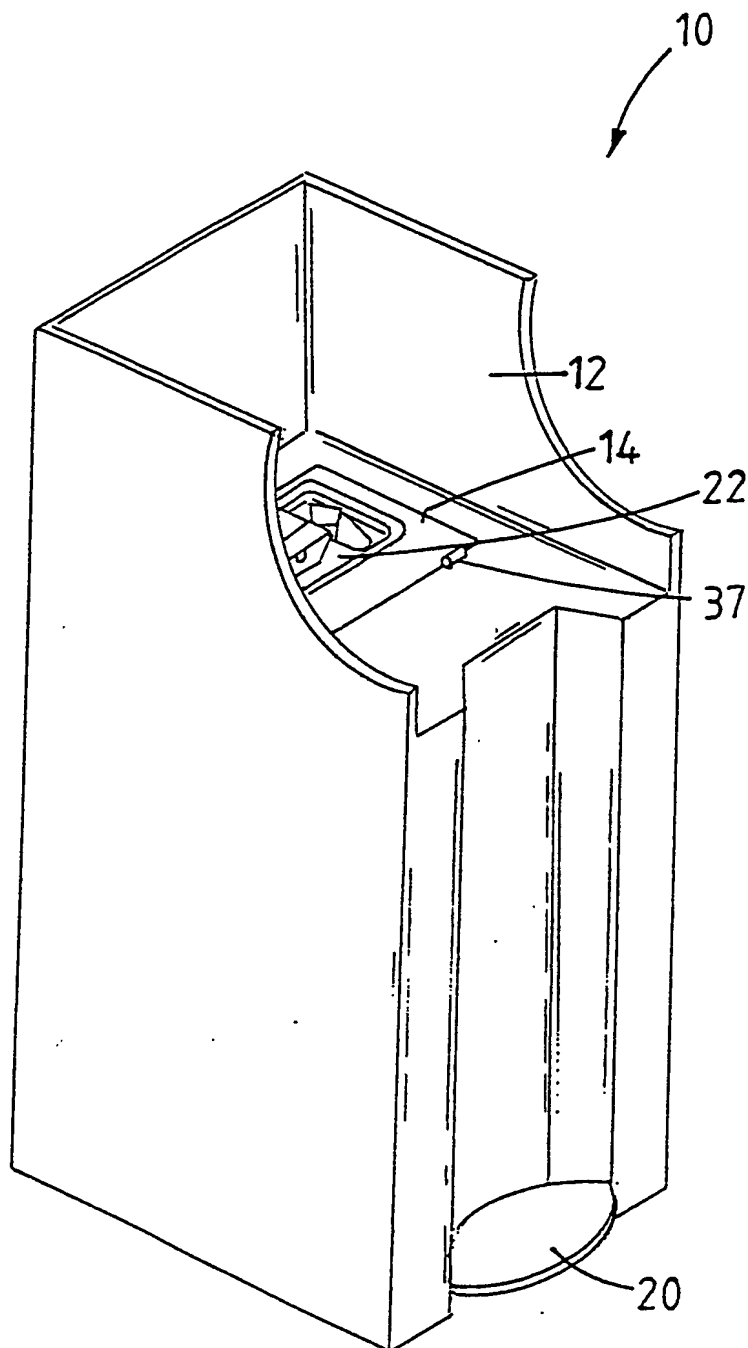


FIGURE 1

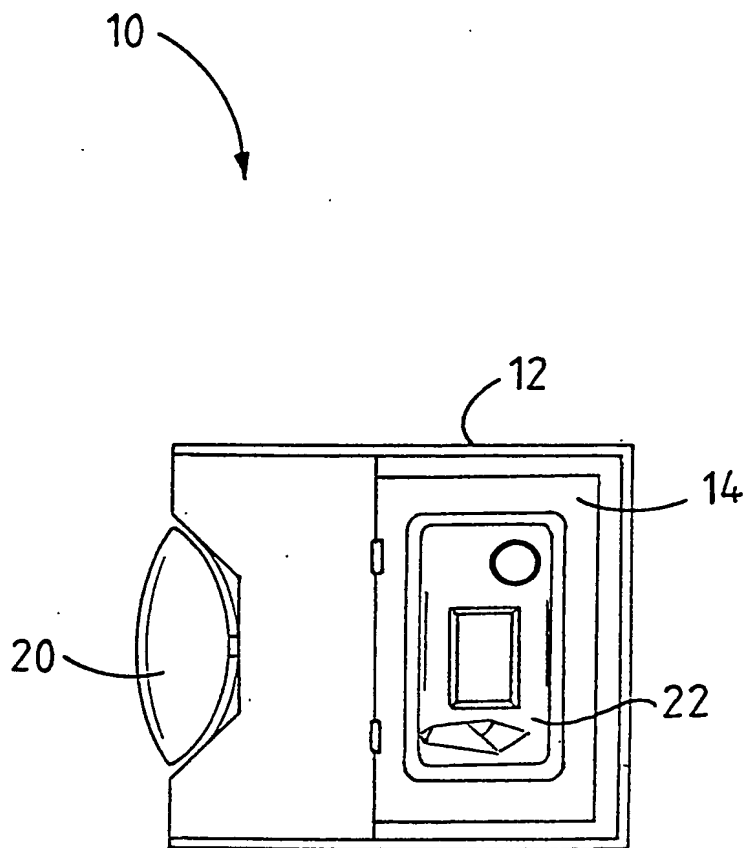


FIGURE 2

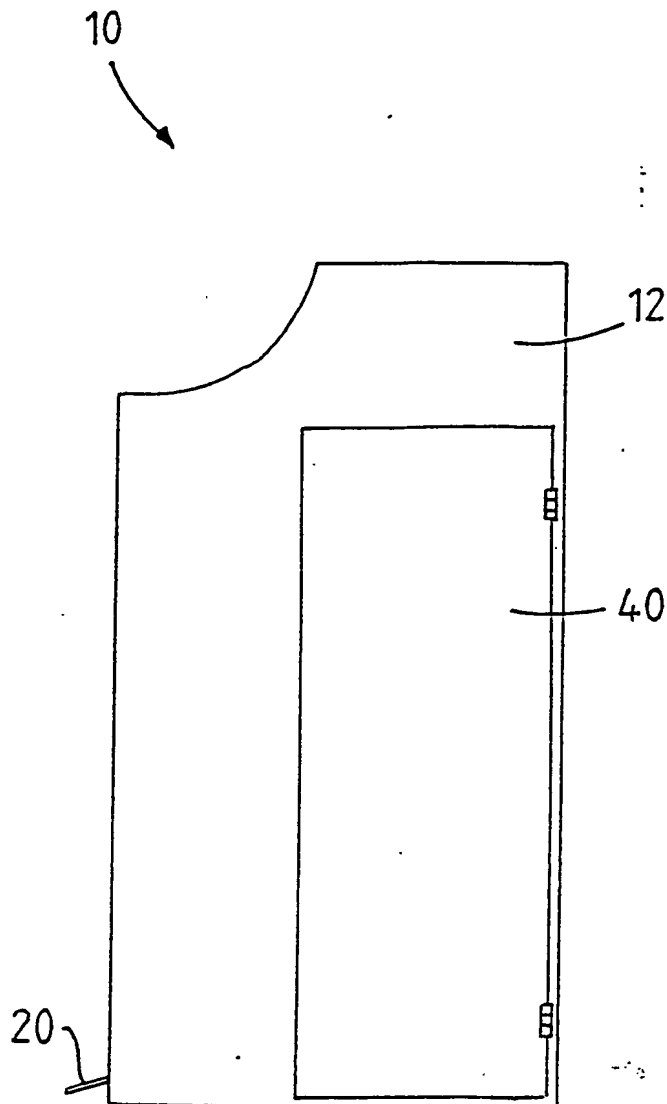


FIGURE 3



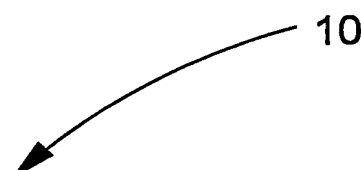


FIGURE 5